REMARKS

The Office Action dated April 14, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1 and 10 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Therefore, claims 1-10 are currently pending in the application and are respectfully submitted for consideration.

The Office Action provisionally rejected claim 1 on the ground of non-statutory obviousness-type double-patenting over claim 1 of co-pending Application No. 10/814343 in view of Kuno. Applicants note that they need not take action as a result of the provisional non-statutory obviousness-type double-patenting rejection as said rejection is provisional in nature and will be withdrawn when the present application or the co-pending application is in condition for allowance, as indicated by the Office Action .

The Office Action rejected claims 1-5 and 7-10 under 35 U.S.C. § 102(b) as allegedly being anticipated by Kuno (U.S. Patent No. 5,802,494) ("Kuno"). Applicants respectfully submit that said claims recite allowable subject matter for at least the following reasons.

Claim 1, upon which claims 2-9 are dependent, recites an image transmission system for a mobile robot. The robot includes a camera for capturing an image as an

image signal, and human detecting means for detecting a human from the captured image. The robot further includes a power drive unit for moving the entire robot toward the detected human, and face identifying means for identifying a position of a face of the detected human. The robot further includes face image cut out means for cutting out a portion of the captured image of the detected human so that the portion of the image includes a face image of the detected human, and image transmitting means for transmitting only the cut out portion of the image including the face image to an external terminal.

Claim 10 recites an image transmission system for a mobile robot. The robot includes a camera for capturing an image as an image signal, and human detecting means for detecting a human from the captured image. The robot further includes a power drive unit for moving the entire robot toward the detected human, and image cut out means for cutting out a portion of the captured image so that the portion of the image includes an image of the detected human according to information from the camera. The robot further includes image transmitting means for transmitting only the cut out portion of the image including the human image to an external terminal, and means for monitoring state variables comprising a current position of the robot, the image transmitting means transmitting the monitored state variables in addition to the cut out face image.

Thus, according to embodiments of the invention, a mobile robot is provided that can locate or identify an object such as a person, and transmit the image of the object or person to a remote terminal. The mobile robot can autonomously detect a human and

transmit the image of the person, in particular the face image of the person. The mobile robot can also accomplish the task of finding children who are separated from their parents in a crowded place, and thus, help their parents reunite with their children. According to embodiments of the invention, by cutting out the image of the face, even when the image signal is transmitted to a remote terminal with a small screen, the face image can be shown in a clearly recognizable manner. Also when the image is shown in a large screen, the viewer can identify the person even from a great distance.

As will be discussed below, Kuno fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Kuno generally describes video cameras (31a, 31b) and a microphone incorporated in the robot capable of taking an image of the patient and detects speech produced by the patient, as described in column 3, lines 41-45 of Kuno. The robot can analyze facial features of the patient to determine if the patient is facing toward or away from the cameras, as described in the upper-half of column 13 of Kuno. The robot can determine whether or not the patient is "making strange facial expressions" frequently, which can lead to a determination that the patient is in "abnormal condition and should, therefore, be monitored and examined by a physician."

Applicants respectfully submit that Kuno fails to disclose, teach, or suggest, all of the elements of the present claims. For example, Kuno fails to disclose, teach, or suggest, at least, "face image cut out means for cutting out a portion of the captured image of the detected human so that the portion of the image includes a face image of the detected

human," and "image transmitting means for transmitting only the cut out portion of the image including the face image to an external terminal," as recited in independent claim 1, and similarly recited in independent claim 10.

Kuno discloses a monitoring system where the image capturing component is a separate component from the image processing component, and only the image capturing component is comprised within the robot of the monitoring system. As described at column 3, lines 27-31, the monitor system of Kuno consists of a data-acquiring section 1, a monitor section 2, a signal transfer path 3 connecting the sections 1 and 2 together, and a data-processing/control center 4 connected to the section 1 and the path 3. As further described at column 3, lines 31-35, the data-acquiring section comprises a robot 5, among other components. As further described in column 3, line 64 – column 4, line 4, the data-processing/control section 4 is designed to process the various data items the section 1 has acquired of the subject, and the data-processing/control section is a component independent of the data-acquiring section 1 and the monitor section 2. As further described at column 4, lines 14-18, the video signals, including the video signal generated by the video camera in the robot 5 of the data-acquiring section 1, are input to the signal processor 32, which is incorporated in the data-processing/control section 4; and it is the signal processor 32 which process these input signals and generates image data. Kuno further discloses, at column 7, lines 41-50 and column 4, line 53 – column 5, line 9, that it is the signal processor 32, which extracts the image-data items representing the head of

the subject from the video signals and transmits the image of the head of the subject to a CRT display 43.

Thus, Kuno discloses that the extraction of the head portion of the subject is performed by the data processing/control section 4 (more specifically, the signal processor 32), and that the data processing/control section 4 is outside of the robot 5. (see col. 7, lines 24-28; col. 8, lines 12-16; FIG. 1). However, independent claims 1 and 10 each clearly recite that all of the limitations are performed by the robot. Thus, there is no disclosure, or suggestion, in Kuno as to the robot either performing the image cutting out so that the cut out portion of the image include a face image of the detected human, or transmitting only the cut out portion of the image to the external terminal.

Therefore, for at least the reasons discussed above, Kuno fails to disclose, teach, or suggest, all of the elements of independent claims 1 and 10. For the reasons stated above, Applicants respectfully request that this rejection be withdrawn.

Claims 1-5 and 7-9 depend upon independent claim 1. Thus, Applicants respectfully submit that claims 1-5 and 7-9 should be allowed for at least their dependence upon independent claim 1, and for the specific elements recited therein.

The Office Action rejected claim 6 under 35 U.S.C. §103(a) as being allegedly unpatentable as obvious over Kuno and Higaki (U.S. Patent Publication No. 2004/0028260) ("Higaki"). The Office Action took the position that Kuno discloses all the elements of the claims with the exception of "a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image with

the faces stored in the face database to identify the cut out face image. The Office Action then cited Higaki as allegedly curing the deficiencies of Kuno (see Office Action at page 15). Applicants respectfully submit that said claims recite allowable subject matter for at least the following reasons.

The description of Kuno, as discussed above, is incorporated herein. Higaki generally discloses a posture recognition apparatus which recognizes instructions signified by postures of persons present in the surroundings, from images obtained with an image capture device. (see Higaki at Abstract).

Claim 6 depends upon independent claim 1. As discussed above, Kuno does not disclose, teach, or suggest all of the elements of independent claim 1. Furthermore, Higaki does not cure the deficiencies in Kuno, as Higaki also does not disclose, teach, or suggest, at least, "image transmitting means for transmitting only the cut out portion of the image including the face image to an external terminal," as recited in independent claim 1. Higaki discloses that a 3D object extraction section 58 extracts a 3D object from the captured 3D image 81, and stores a 3D object ID 101 and a relative position 102. On receiving this, the face recognition section 60 picks out only the face part from the color image, based on the face position coordinates 105 and 106, and obtains a face feature vector. (see Higaki at paragraph 0086). However, Higaki fails to disclose, or suggest, "transmitting only the face part from the color image to an external terminal."

Thus, the combination of Kuno and Higaki does not disclose, teach, or suggest all of the elements of claim 6. Additionally, claim 6 should be allowed for at least its dependence upon independent claim 1, and for the specific elements recited therein.

The Office Action rejected claim 6 under 35 U.S.C. §103(a) as being allegedly unpatentable as obvious over Kuno in view of Nakadai, *et al.* (U.S. Patent No. 6,967,455) ("Nakadai"). The Office Action took the position that Kuno discloses all the elements of the claims with the exception of "a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image with the faces stored in the face database to identify the cut out face image." The Office Action then cited Nakadi as allegedly curing the deficiencies of Kuno. Applicants respectfully submit that said claims recite allowable subject matter for at least the following reasons.

The description of Kuno, as discussed above, is incorporated herein. Nakadai generally discloses a robot visuoauditory system which makes it possible to process data in real time to track vision and audition for an object. The system can integrate visual and auditory information on an object to keep track of the object and allow the system to process the information in real time to continually track the object both visually and auditorily. (see Nakadai at Abstract).

Claim 6 depends upon independent claim 1. As discussed above, Kuno does not disclose, teach, or suggest all of the elements of independent claim 1. Furthermore, Nakadai does not cure the deficiencies in Kuno, as Nakadai also does not disclose, teach, or suggest, at least, "transmitting only the face part from the color image to an external

terminal." While the robot disclosed in Nakadai performs face recognition, there is no disclosure, or suggestion, that the robot transmits only the extracted image (including the face image) to an external terminal.

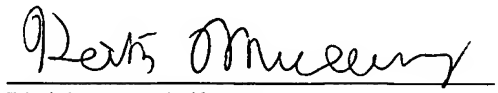
Thus, the combination of Kuno and Nakadai does not disclose, teach, or suggest all of the elements of claim 6. Additionally, claim 6 should be allowed for at least its dependence upon independent claim 1, and for the specific elements recited therein.

For at least the reasons discussed above, Applicants respectfully submit that the cited prior art references fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-10 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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